**CSC 5351-Fall 2024**

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The following table is a summary to all the models we have trained. We tried to try different YOLO versions, but we also attempted to use SSD, Ensemble Method (EfficientDet and YOLO), and FasterRCNN. However, all three of them were unsuccessful. In SSD and EfficientDet we faced importation issues, as for FasterRCNN, it was taking an extremely long time which was not efficient.

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| --- | --- | --- | --- |
| MODEL | DESCRIPTION | F1-SCORE | MAP-0.5 |
| YOLO5s | Combined Large Dataset\* | 66.3% | 62.3% |
| YOLO8n | Transfer Learning | 53.5% | 48.3% |
| YOLO8n | Moroccan Data Only | 41.5% | 33.9% |
| YOLO8n | Combined Large Dataset\* | 62.4% | 63% |
| YOLO11n | Moroccan Data Only | 47.8% | 35.7% |
| YOLO11n | Transfer Learning | 49.2% | 43.3% |
| YOLO11n | Combined Training Dataset Only | 48% | 38.4% |
| YOLO11n | Combined Large Training Dataset\* | 63.5% | 56.6% |
| RobotFlow | Combined Large Training Dataset\* | 74% | 72.5% |

\* Combined Large Training Dataset refers to a combined dataset that incorporates:  
1. The Moroccan Dataset

2. The Potholes dataset provided by Soufiane in the Github

3. A larger dataset with 1243 images that we transformed into YOLO format using Robotflow. (link: <https://www.kaggle.com/datasets/sachinpatel21/pothole-image-dataset>)

"Roboflow 3.0 Object Detection (Fast)" refers to a model trained using Roboflow Train 3.0's infrastructure, not a standalone model like YOLOv8 or YOLO11.

Roboflow Train 3.0 is the training platform/infrastructure. When we use this platform with the "Fast" training option, it trains a model optimized for our specific dataset.

Can be found at: <https://blog.roboflow.com/roboflow-train-3-0/>

